Facility Name: **Appling County Pellets**
City: Baxley
County: Appling
AIRS #: 04-13-001-00032 Application #: TV-694793

Date Title V Application Received: September 22, 2022
Permit No: 2499-001-0032-V-02-2

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Introduction

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and draft operating permit amendment. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Sections 391-3-1-.03(1) and 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public comment period and EPA review process will be described in an addendum to this narrative.

I. Facility Description

A. Existing Permits

Table 1 below lists the current Title V permit, and all administrative amendments, minor and significant modifications to that permit, and 502(b)(10) attachments.

Table 1: Current Title V Permit and Amendments

Permit/Amendment Number	Date of Issuance	Description
2499-001-0032-V-02-0	March 27, 2019	Title V Renewal
2499-001-0032-V-02-1	May 9, 2022	Operation of wet electrostatic precipitator (WESP) and regenerative thermal oxidizer (RTO), and replacement of all conditions in Sections 2-6

B. Regulatory Status

1. PSD/NSR/RACT

Appling County Pellets (hereinafter "facility") is located in Appling County, which is an attainment area for all criteria pollutants. The facility is not one of the 28 named source categories under Prevention of Significant Deterioration (PSD) regulations. It is considered a minor source under PSD regulations because the potential-to-emit (PTE) for all pollutants are each below 250 tons per year (tpy). Emissions of volatile organic compounds (VOC) are limited to 249 tons per year (tpy) for PSD avoidance.

Non-attainment New Source Review (NAA NSR) is not applicable because Appling County is an attainment county.

Since Appling County is not one of the counties subject to the requirements of GA Rules (tt) or (yy), the facility is not subject to any reasonably available control technology (RACT) requirements.

2. Title V Major Source Status by Pollutant

Table 2: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	YES			✓
PM_{10}	YES			✓
$PM_{2.5}$	YES			✓

SO_2	YES			✓
VOC	YES	✓		
NO_x	YES			✓
CO	YES			✓
TRS	NO			
H_2S	NO			
Individual HAP	YES		✓	
Total HAPs	YES		✓	
Total GHG	YES			✓

II. Proposed Modification

A. Description of Modification

The facility has proposed replace the two existing pellet coolers (ID Nos. PC1 and PC2) with new units (ID Nos. PC3 and PC4). The new pellet coolers will each be equipped with a cyclone (ID Nos. CYC3 and CYC4) and the existing pellet cooler baghouse (ID No. BGH) will be removed. No other equipment at the facility will be modified.

The existing pellet coolers (ID Nos. PC1 and PC2) and baghouse (ID No. BGH) will not be decommissioned until the installation of the new pellet coolers (ID Nos. PC3 and PC4) and cyclones (ID Nos. CYC3 and CYC4).

B. Emissions Change

Potential emissions from the modification were calculated assuming that the two existing pellet coolers (ID Nos. PC1 and PC2) and their associated baghouse (ID No. BGH) would be decommissioned and removed before the installation of the new units. An increase in potential PM emissions is expected from the replacement of the existing baghouse with the new cyclones (ID Nos. CYC3 and CYC4). No other emissions increases are expected from the modification. The existing facility-wide emission caps of 249 tpy for VOC emissions and 10/25 tpy for single/combined HAP emissions will remain unchanged.

Table 3: Emissions Change Due to Modification

Pollutant	Is the Pollutant Emitted?	Potential Emissions (tpy)	Net Potential Emissions Increase (Decrease) (tpy)
PM/ PM_{10}/ $PM_{2.5}$	YES	63.1	37.4
SO_2	YES	7.12	0
VOC	YES	249	0
NO_x	YES	52.9	0
CO	YES	46.2	0
TRS	NO	--	--
H_2S	NO	--	--
Individual HAP	YES	10	0
Total HAPs	YES	25	0

Note that the PM potential emissions from the new pellet coolers (ID Nos. PC3 and PC4) via the new cyclones (ID Nos. CYC3 and CYC4), 56.3 tpy, were calculated using the estimated 0.03 grains per cubic foot of grain loading and 50,000 actual cubic feet per minute (acfm) with 8,760 hours per year of operation.

C. PSD/NSR Applicability

The facility will remain a minor source under PSD regulations after the modification. VOC facility-wide emissions will remain capped at 249 tpy.

III. Facility Wide Requirements

A. Emission and Operating Caps:

There are no changes to any existing emission caps as a result of the modification. Facility-wide potential VOC emissions are limited to 249 tpy for PSD avoidance, and facility-wide potential single and combined HAP emissions are limited to 10 and 25 tpy, respectively, to remain below the Title V major source threshold.

The facility is also restricted to processing no more than 175,000 oven-dried tons of wood per year (at 11% moisture) in the dryer (ID No. DRY) and no more than 350,000 tons of wood per year (at 5% moisture) through the dry hammermills (ID No. DHM1 and DHM2), pellet mills (ID Nos. PC3 and PC4), and pellet handling/storage (ID No. PHS).

B. Applicable Rules and Regulations

None applicable.

C. Compliance Status

Application No. TV-694793 does not indicate any non-compliance issues.

D. Permit Conditions

New Condition 2.1.6 limits the facility to processing no more than 350,000 tons (at 5% moisture) in the dry hammermill (ID Nos. DHM1 and DHM2), pellet mills (ID Nos. PM1-PM10), pellet coolers (ID Nos. PC3 and PC4), and pellet handling/storage (ID No. PHS) during any twelve consecutive months. This condition will apply after the startup of Pellet Coolers PC3 and PC4.

IV. Regulated Equipment Requirements

A. Brief Process Description

Green wood and dry material are received by the facility and stored. Green wood first passes through the green hammermill (ID No. GHM) and the dryer (ID No. DRY). Process heat is provided by a 65 MMBtu/hr bark burner (ID No. BUR). Dryer output is conveyed to two dry hammermills (ID Nos. DHM1 and DHM2), combined with dry material, and processed through ten pellet mills (ID Nos. PM1 – PM10) and one of two pellet coolers (ID Nos. PC3 and PC4). Various pellet handling and storage (ID No. PHS) operations take place prior to shipping. Emissions from the bark burner (ID No. BUR), dryer (ID No. DRY), and pellet mills (ID Nos. PM1 – PM10) vent through the WESP and RTO. Dry hammermill (ID Nos. DHM1 and DHM2) emissions are controlled by a bin vent (BV) while pellet coolers (ID Nos. PC3 and PC4) emissions each controlled by a cyclone (ID Nos. CYC3 and CYC4).

B. Equipment List for the Process

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
PC3, PC4	Two (2) Pellet Coolers rated at 20 ODT per hour each @ 5% moisture	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n)	**CYC3, CYC4**	**Cyclones**

*New emission units are in bold, removed emission units have been crossed out

C. Equipment & Rule Applicability

Emission and Operating Caps –

The facility will be required to operate the cyclones (ID Nos. CYC3 and CYC4) during the operation of the new pellet coolers (ID Nos. PC3 and PC4). This is considered part of the PM PSD synthetic minor limit. PM PTE presented in Table 3 of the narrative were calculated using after control PM emission rates. Without the use of the wet ESP, bin vent filters, and cyclones, uncontrolled PM PTE is likely to exceed 250 tpy.

Applicable Rules and Regulations -

Georgia Rule 391-3-1-.02(2)(b), Visible Emissions

GA Rule (b) limits the visible emissions from all manufacturing processes not to exceed 40% opacity. It is expected that the opacity of all emissions from the pellet coolers (ID Nos. PC3 and PC4) will be always well below 40% and will therefore comply with GA Rule (b).

Georgia Rule 391-3-1-.02(2)(e), Particulate Matter Emission from Manufacturing Processes

GA Rule (e) limits PM emissions from manufacturing processes based on process input weight rate. The allowable PM emission rate for all manufacturing processes is specified by the following equations:

$E = 4.1P^{0.67}$ for process input weight up to and including 30 tons per hour.

$E = 55P^{0.11} - 40$ for process input weight rate above 30 tons per hour.

Where E equals the allowable PM emission rate in pounds per hour and P equals the process input weight in tons per hour.

Emissions from the pellet coolers (ID Nos. PC3 and PC4) will be controlled by cyclones (ID Nos. CYC3 and CYC4), and therefore, PM emissions are expected to comply with GA Rule (e) limits.

D. Permit Conditions

New Condition 3.2.6 requires the facility to shut down and remove Pellet Coolers PC1 and PC2 and Baghouse BGH after initial startup of Pellet Coolers PC3 and PC4.

New Condition 3.2.7 requires the facility to operate the bin vent (ID No. BV) and cyclones (ID Nos. CYC3 and CYC4) at all times while their respective emission units are operating. This condition will apply after the startup of Pellet Coolers PC3 and PC4 and cyclones CYC3 and CYC4.

New Conditions 3.4.1, 3.4.2, and 3.4.4 were modified to generalize their applicability.

V. Testing Requirements (with Associated Record Keeping and Reporting)

New Condition 4.2.6 requires the facility to conduct repeated PM, VOC, formaldehyde, acetaldehyde, and methanol performance tests for Bark Burner BUR, Dryer DRY, and Dry Hammermills DHM1 and DHM2 after the initial startup of Pellet Coolers PC3 and PC4.

New Condition 4.2.7 requires the facility to conduct performance tests for Pellet Coolers PC3 and PC4 for total PM, VOC, formaldehyde, acetaldehyde, and methanol emissions within 180 days after the initial startup of PC3 and PC4. Subsequent performance tests must also be conducted once every 48 months. The facility must establish the proper pressure drop ranges during the performance tests.

New Condition 4.2.8 requires the facility to submit a permit application within 120 days of testing if any emission factor derived from performance testing results exceed the respective emission factors listed in Section 6, or to demonstrate that the emission factor derived is not representative of normal emissions. This condition will apply after the startup of Pellet Coolers PC3 and PC4. Note that the facility must use the higher tested emission rate to track actual emissions starting on the test date.

VI. Monitoring Requirements (with Associated Record Keeping and Reporting)

New Condition 5.2.15 requires the facility to install, calibrate, maintain, and operate systems to monitor the dried wood rate exiting the dryer (ID No. DRY) and the dry hammermills (ID Nos. DHM1 and DHM2) and the pellet production rate through the pellet coolers (ID Nos. PC3 and PC4) and pellet mills (ID Nos. PM1-PM10). This condition will apply after the startup of Pellet Coolers PC3 and PC4.

New Condition 5.2.16 requires the facility to install and maintain pressure drop indicators on the bin vent filter (ID No. BV) and the pellet cooler cyclones (ID Nos. CYC3 and CYC4). This condition will apply after the startup of Pellet Coolers PC3 and PC4 and Cyclones CYC3 and CYC4.

Although daily VE check is typically required for baghouses but not on other PM control devices, daily VE check is required for all PM control devices for the pellet industries. Therefore, upon the initial startup of PC3 and PC4, the facility must conduct daily VE check on the exhaust of WESP/RTO, BV, CYC3, and CYC4. This is included in new Condition 5.2.17.

New Conditions 5.2.18 and 5.2.19 include the same CAM requirements specified in existing Conditions 5.2.11 and 5.2.13, except the new conditions no longer includes the existing pellet coolers (ID Nos. PC1 and PC2) after PC3 and PC4 starts operation. Note that the after-control PM PTE for each of PC3 and PC4 (56.3 tpy) are lower than 100 tpy; they are not large pollutant specific emission unit specified in 40 CFR 64. Therefore, PC3 and PC4's CAM Plan are not required during this modification. Their CAM Plan will be required during the next Title V renewal process.

VII. Other Record Keeping and Reporting Requirements

Note that existing Condition 6.1.7c.ii. contained duplicative excursion reporting requirements that were included in existing Conditions 6.1.7c.vii. and c.ix.. Therefore, this subparagraph is removed by the proposed permit amendment.

New Condition 6.1.7b.vi. requires the facility to report as an exceedance any twelve-consecutive month period for which the total amount of wood processed in the pellet mills (ID Nos. PM1-PM10), pellet coolers (ID Nos. PC3 and PC4), and pellet handling and storage system (ID No. PHS) exceeds 350,000 tons. This Condition will apply after the startup of Pellet Coolers PC3 and PC4.

New Condition 6.1.7c.xi. requires the facility to report as an excursion any instance in which daily pressure drop readings of the bin vent (ID No. BV) and/or the pellet cooler cyclones (ID Nos. CYC3 and CYC4) are outside the established range for two consecutive days. This Condition will apply after the startup of Pellet Coolers PC3 and PC4.

New Condition 6.1.7c.xii. requires the facility to report as an excursion any failure to perform the weekly dry hammermill bin vent (ID No. BV) inspections in accordance with Condition 5.2.8. This Condition will apply after the startup of Pellet Coolers PC3 and PC4.

New Condition 6.1.7c.xiii. requires the facility to report as an excursion any failure to perform the daily determinations of visible emissions from the WESP/RTO, bin vent (ID No. BV) exhaust, and/or pellet cooler cyclones (ID Nos. CYC3 and CYC4), monitored in accordance with Condition 5.2.17). This Condition will apply after the startup of Pellet Coolers PC3 and PC4.

New Condition 6.1.7c.xiv. requires the facility to report as an excursion any two consecutive daily determinations of visible emissions from a single source requiring action under Condition 5.2.17. This Condition will apply after the startup of Pellet Coolers PC3 and PC4.

New Condition 6.1.7c.xv. requires the facility to report as an excursion any specific identification of each period of excursion described in paragraphs iii., iv., xiii., ix., and xi. through x.iv. This Condition will apply after the startup of Pellet Coolers PC3 and PC4.

New Condition 6.2.21 requires the facility to keep records of the total amount of softwood and hardwood processed at the facility each month and to maintain a 12-month rolling average total of the process rate for all processes.

New Condition 6.2.22 requires the facility to calculate the monthly PM emissions from the facility using the records from Condition 6.2.21 and the provided emission factors. The facility must notify the Division if any monthly total emissions exceed 20.8 tons. The proposed PM emission factor for new Pellet Coolers PC3/PC4 via new Cyclones CYC3/CYC4 was calculated as follows:

(56.3 tons PM/yr) * (2,000 lbs PM/ton PM) / (350,000 tons wood/yr) = 0.322 lb PM/ODT wood

New Condition 6.2.23 requires the facility to use the monthly total PM emissions calculated in accordance with Condition 6.2.22 to calculate a rolling 12-month total for PM emissions each month. The facility must notify the Division if any rolling 12-month total exceeds 250 tons.

New Condition 6.2.24 requires the facility to calculate monthly VOC emissions from the facility using the records from Condition 6.2.21 and the provided emission factors. The facility must notify the Division if any monthly VOC emissions exceed 20.7 tons.

New Condition 6.2.25 specifies an equation to be used by the facility to calculate VOC emissions.

New Condition 6.2.26 requires the facility to use the monthly VOC emissions per Condition 6.2.24 to calculate the rolling 12-month total VOC emissions each month. The facility must notify the Division if any 12-month rolling total exceeds 249 tons.

New Condition 6.2.27 requires the facility to calculate the monthly individual and total HAP emissions using the records from Condition 6.2.21 and the provided equations and emission factors. The facility must notify the Division if any monthly total single HAP emissions exceed 0.83 tons or any monthly combined HAP emissions exceed 2.08 tons.

New Condition 6.2.28 requires the facility to calculate the 12-month rolling total of single and combined HAP emissions from the facility using the monthly HAP emissions from Condition 6.2.27. The facility must notify the Division if any 12-month total single HAP emissions exceed 10 tons or any 12-month total combined emissions exceed 25 tons.

Note that the tests conducted in 2021 have revealed that many of the actual emission factors were below the emission factors listed in existing Conditions 6.2.6, 6.2.10, and 6.2.15. However, the table would not be updated unless the facility specifically requested to do so. If the emission factors are updated, the future test results will be more likely to exceed the 2021 test results; future permit amendment will be required when this takes place.

Addendum to Narrative

The 30-day public review started on month day, year and ended on month day, year. Comments were/were not received by the Division.